

39

What does the bark of these trees look like to you? Hint—one of its common names is **Musclewood**. That not only describes what it looks like, but also reminds you the wood is quite strong. This tree also goes by the name of **Blue Beech** or **American Hornbeam**. How many can you count in this area?

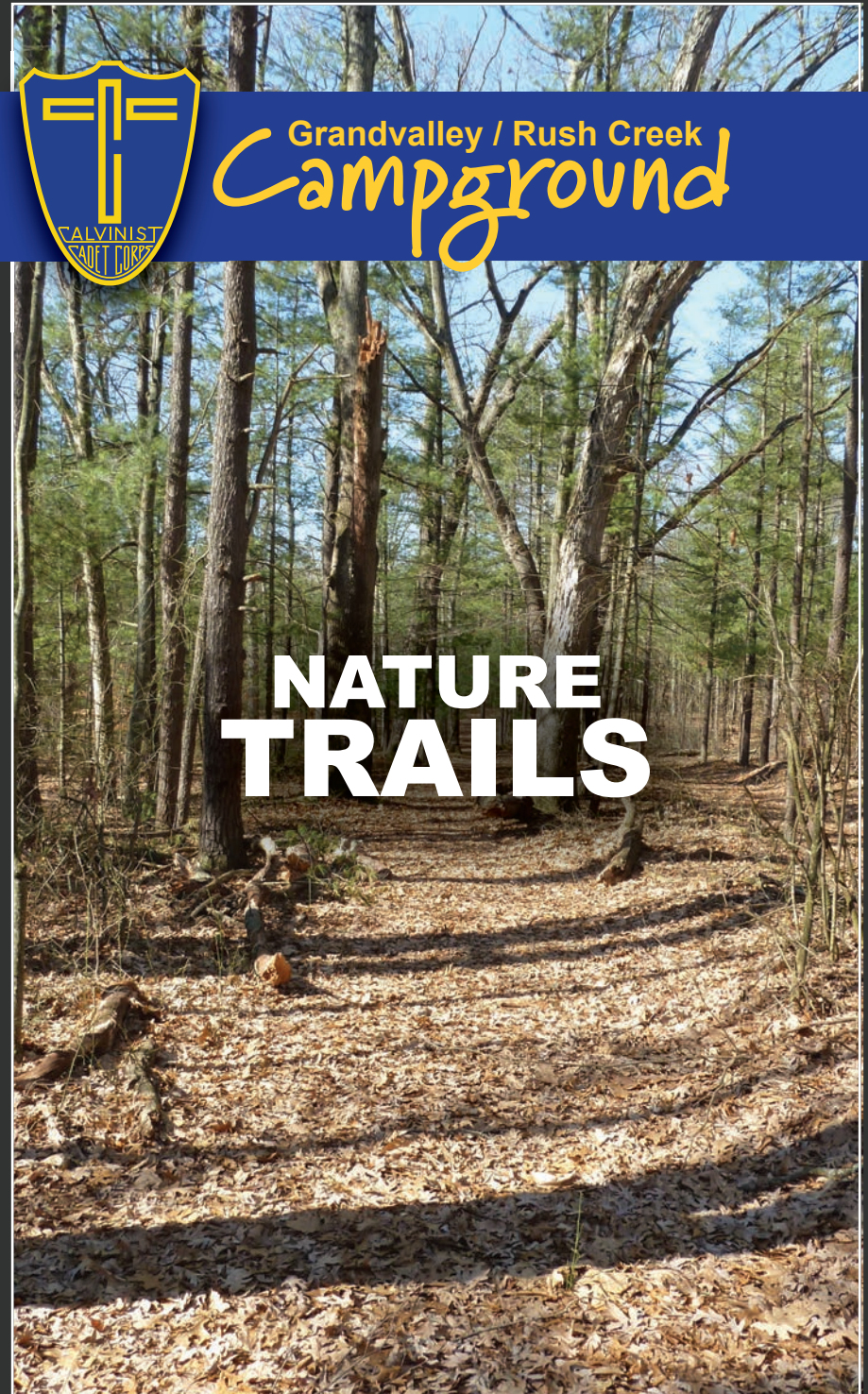
40

This shrub or small tree with multiple thin trunks is called **American Witchhazel**. This is one of the latest flowering trees you'll see in the forest each year, showing thin yellow flowers in late October/early November. The tree must be at least 6-years old in order to flower.



Related Cadet Badges

Bird watching	Hiking	Rock Collecting
Camping	Hunting	Spiders
Creation	Insect Life	Weeds and Wildflowers
Ecology	Mushrooms and Fungi	Wildlife Study
Fishing	Photography	
Forestry	Pioneering	



Look carefully. Do you see the **shelf mushroom** on the dead stump? Do you see any other mushrooms around? Did you know that what you see and think of as a mushroom is really only the fruiting body (think flower) of a much larger fungus found in the ground? Go to the Rush Creek Council campground webpage for many pictures of mushrooms found here.

www.rushcreekcadetCouncil.org/campground

Stand in this spot and look around. How many **different trees** do you see? Can you identify find the dogwood, white oak, red maple, black cherry, and service berry trees?

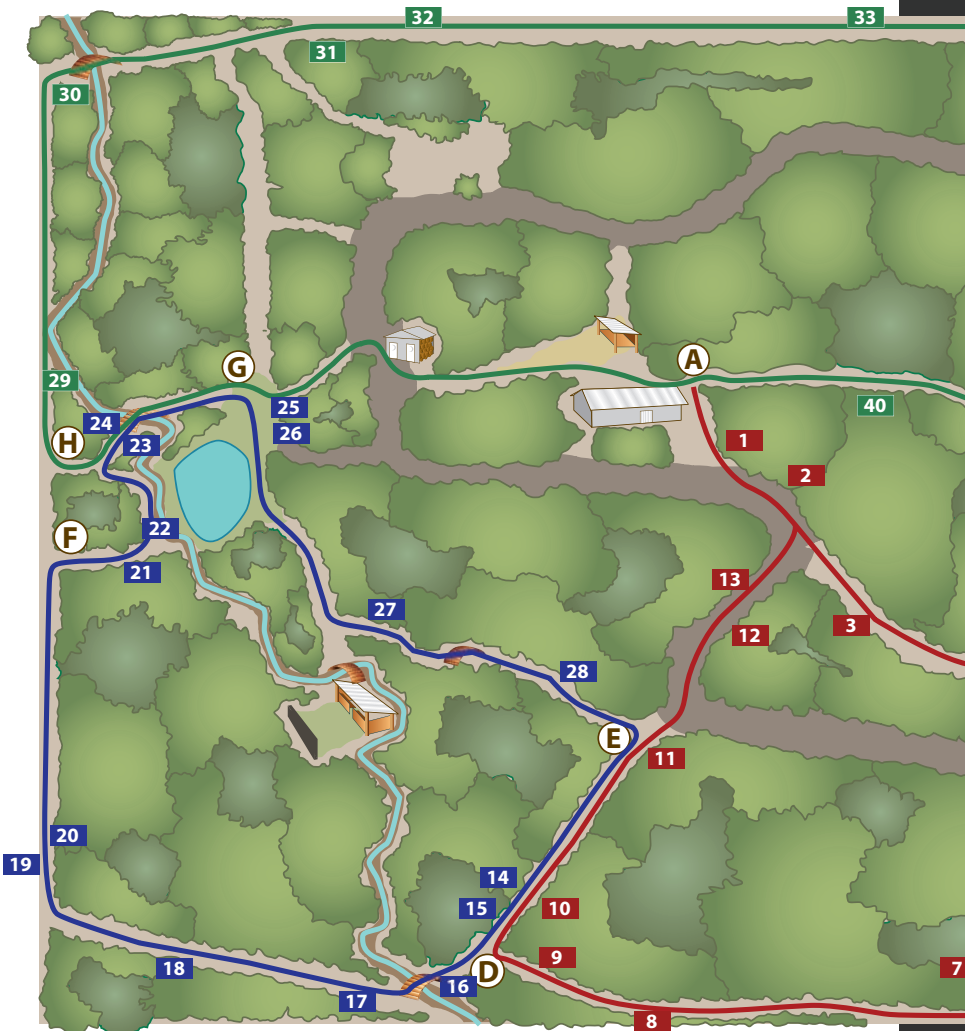
The **Northern Red Oak** is another of the hardwood trees in the campground. Can you guess how it got its name? The wood is actually a reddish brown color and is often used for flooring and furniture. Can you find any of its acorns? The acorns of a red oak mature twice each year instead of only once like a white oak.

This shade tolerant **American Beech** likes to grow in well-drained moist soil. Young saplings can survive in dense shade for years, eventually reaching a height of 60-70 feet when mature. Its wood is valuable for furniture and flooring.

You are standing on one of the **highest points** in the campground. What differences do you see between this area and the area around Miller Creek? Are there different trees, shrubs, or flowers? Can you think of any animals that might like living by the creek more than in this area?

“Even within a relatively small area, variations in topography can create variations in temperature, moisture, and exposure to sun and wind. These differences create conditions that support different natural communities.”

(Source: website—NatureServe and The National Park Service National Capital Region.)



- Nostalgia Trail (.36 miles)
- Miller Creek Trail (.38 miles)
- North Bridge Trail (.8 miles)



30

This spot gives you a nice view of our **northern-most bridge** over Miller creek. The planks of the bridge are made of white oak because of its resistance to rot. The bridge is built high above the creek to avoid having branches and logs hit it during heavy rains and flooding. As you make your way across the bridge notice the heavy erosion of the banks on the north side.

31

The **Eastern Flowering Dogwood**, with its alligator-skin-like bark, erupts in beautiful white flowers in May. While not a large tree, growing only to 20 or 30 feet, it is a hard wood. The wood is often used for spools, pulleys, and mallet handles and heads.

Do you see any smaller, younger Dogwood trees in the area?

32

Do you see the **snag** here? Snags are “standing, dead or dying trees, which provide excellent natural homes for a variety of wildlife.”

There are two basic kinds of snags. **Hard Snag** have rotten centers and hard exteriors and often make the best dens. **Soft Snags** have a softer exterior and make good foraging sites for insect eating birds, as well as nesting for woodpeckers, chickadees, and nuthatches. They often rot quickly.

What kind of snag is this—hard or soft?

What do you think made the holes?

Walk back to number 31, looking along the north side of the path, and see how many other snags you can find.

(Source: Sargent, M.S. and Carter, K.S., ed. “Managing Michigan’s Wildlife; a landowner’s guide”. Michigan United Conservation Clubs, East Lansing, MI 297pp.)

33

The **Bur Oak** was often associated with the edges of prairies due to their fire and drought resistance. Early settlers often chose oak groves for their home sites due to the cooling shade and valuable wood.



These nature trails were designed to acquaint you with the Grandvalley/Rush Creek Campground. In June of 1963 the Council purchased this 80 acres of land for camping, council events, nature trails, playing, and enjoying God’s great creation. We hope you enjoy it as much as we do.



1

This dense clump of trees is **Sassafras**. Once used to flavor root beer, this sun-loving tree's roots and bark were also used to make a tea thought to improve your health.

Take a closer look at the leaves. The sassafras can have 3-lobed leaves as well as oval and mitten-shaped leaves all on the same tree. Can you find all three? The leaves turn beautiful colors in the Fall.



2

This is a **Red Hickory** tree. Its strong, heavy wood was once used for carriages and wagons as well as many other tools. One of its common names is Broom Hickory. Can you guess why? (It was used for broom handles).

Look on the ground in the Fall for hickory nuts. Yet another name for this tree is a pignut hickory because it was thought the nuts were only fit for pigs. The nuts are actually a good source of food for many animals including foxes, rabbits, raccoons, squirrels and bears.

3

This is a stump of a **White Pine** tree. White pines once covered much of Allegan county but have been significantly reduced by fires and clear-cutting (cutting down trees without replacing them). Once used for ship masts and fencing, the wood from a white pine is easy to work with and takes paint better than almost any other wood.

4

This is the remains of a **1914 Ford car** probably left by a farmer who worked this land. While it can be interesting to find things from past generations, it also highlights how long trash can remain when not disposed of properly.

5

These are **White Oak** trees. A slow-growing tree that is water and rot resistant. These trees grow about 1 inch in diameter every 10 years. How old do you think these trees are?

Besides producing very useful wood for furniture, flooring, railroad ties, and ships, it also produces edible acorns that feed turkeys, squirrels, grouse, deer and other wild animals.



25

The **American Beech** is a shade tolerant tree often found in moist, well-drained soil. It is identifiable in winter by its long, thin winter buds and smooth bark. Look for the spiny outer shell of beechnuts starting in late August through October.

26

The **Tulip** tree has a very distinctive leaf shape. Can you spot them? Did you know that George Washington planted Tulip Trees like this at Mount Vernon that are now 140 feet tall? They can grow over 2 feet per year, making them a very fast growing tree.

Do you see any of the tulip-like flowers? They usually open up in May and June and are a greenish-yellow color. If you don't spot them in the tree you may see them dotted along the ground.



27

This is a clump of **Blue Beech** (also called American Hornbeam or Muscledwood) trees. Take a close look at the muscle-like trunks. This North-American native is happy to be one of the understory trees in the forest, typically growing to around 20–45 feet.

28

This is a **Red Hickory** (pignut/broom hickory) tree—a native to Michigan. Growing up to 70 feet high, it produces nuts that can be sweet or bitter. The wood of this type of tree was once used for wagon wheels.



29

Take a look at the shape of **Miller Creek**. Can you figure out why it curves where it does? It may even look different each time you come.

As the rains fill up the creek the water can both erode areas away and also carry silt to build areas up, changing the path of the creek. Rocks and trees can also affect the shape of the creek.

Can you see the flood plain of the creek here? A flood plain is generally a flat area of land next to a river or stream where water goes when it overflows the banks.

fully developed and falling to the ground. The acorns, then, become a great source of food for blue jays, wild turkeys, squirrels, small rodents, white-tailed deer, raccoons, and bear. Incredibly, this food source could be around for up to 400 years.

21

While similar to the white oak, this **Swamp White Oak** has two-toned leaves with dark green on top and velvety-white below. Its acorns, dropped in September or October, provide food for squirrels, turkeys, deer, and woodpeckers. The tree itself sustains many insects and birds. This type of tree is also a popular landscaping tree because of its ease to transplant and its heavy shade.

22

The man-made **pond** you see below was created to give the Cadets a place to fish, swim, ice skate, and to view wildlife. The 11-foot deep center was created through many hours of tree cutting, stump removal, crane and bulldozer work. When it was created, 75 largemouth bass and 275 bluegill were planted into it. The pond is fed by diverting water from Miller Creek and is kept from overflowing with an outlet to the creek.

23

The **Eastern White Pine** is the largest conifer in Michigan, reaching heights of 70 to 100 feet. It is a favorite nesting tree for bald eagles. Mature white pines often live 200–250 years, with some in Michigan at roughly 500 years old. Can you guess how old this tree might be? Multiply the diameter of the tree at chest height by the growth factor to determine the tree's age (The white pine tree has a growth factor of 5).

24

Take a close look around this area. Do you see any thin, reed-like grass that looks a little like bamboo? Those are called **Horsetails** (also snakegrass or puzzleggrass), and it has survived since prehistoric times.



This area, like many in the campground, is a perfect **natural wildlife habitat**. The various shrubs and vines produce food, cover, and homes for many kinds of insects, song birds, and other animals. Take a minute to be quiet and listen. How many different sounds do you hear? Can you identify any of them? Can you find any nests or locate any insects?

6

The **Black Walnut** tree is one of the most abundant trees in the eastern U.S. These trees can grow over 100 feet tall and can be used to make high-quality furniture veneers, and gun stocks. It was even used to make log cabins for early settlers. The nuts that fall in October are edible by people and animals. Do you see any nuts on the ground?

7

This colony of **Mayapples**, which probably grew from a single root, appear here in early spring, even before the trees have leaves. If you visit in April or May you should find some flowers on them, or come a little later to see the “apples”. The fruit (apples) is the only part of this plant that doesn't contain a highly toxic substance which, ironically, is also an ingredient in some prescription drugs.

8

This fast-growing **Black Cherry** tree is the largest type of cherry tree. It has smooth bark for the first 10 years of its life, but does not produce seeds until about that time. It takes about 30 years before seed production is heavy. The Black Cherry can continue producing seeds for 100 years or so. The wood of this tree is used for furniture and cabinet work. How old do you think this tree is?

9

This stop gives you a nice view of a **vernal pool**—only visible during times of heavier rains. While it won't have any fish, it's a likely place to find frogs and toads. It also provides a natural home for many kinds of wildlife.

10

11

The mottled green and white bark of this **Sycamore** tree makes it easy to identify. The wood of this fast-growing tree was used to make food containers by early settlers and is often used for butcher blocks. While it was probably a different species of sycamore, do you remember who climbed this type of tree in the Bible?

12

Look a little ways off the road for this **Red Pine** tree. Made obvious because of its reddish-orange scaly bark, you should be able to spot a few others in the area. Besides its bark, another identifying feature is the 4–6 inch needles that grow in bundles of two. When the needles are bent, they break cleanly instead of bowing. These trees are sometimes used for utility poles, paper, or construction.

13

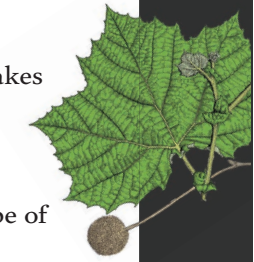
How old do you think these **Eastern White Pines** are? Mature white pines can often be as old as 200 to 250 years old. As the tallest type of tree in eastern North America, it's a favorite for bald eagle nests. Amazingly, the needles contain more vitamin C than lemons or oranges.

14

This is a **Red Maple** tree—the most abundant tree species in North America. The Red Maple gets its name from its red winter twigs and buds, red spring flowers, and red leaf stalks. In the Fall the leaves may turn a brilliant red or yellow and in the Spring you'll see its red flowers well before it leafs out. Its seeds, unlike the sugar maple, mature and drop in late Spring instead of the Fall.

15

This **Black Cherry** tree has fruit that is a good source of food for birds and other wildlife. Its bark and roots contain hydrocyanic acid which has been used in cough medicine and flavoring. The wood is often used for furniture and cabinet work.



16

Miller Creek, part of the Rabbit River watershed, runs through the whole west side of the campground. It eventually empties into the Rabbit River, then the lower Kalamazoo River, and then into Lake Michigan. While there are fish and other life in Miller Creek, there are also still traces of PCB (polychlorinated biphenyls) contamination. PCB manufacturing was banned in 1979, but PCBs remain for a long time in fish tissue and bottom sediment.

17

The strange, smooth looking tree trunk to the right of the marker belongs to a **Musclewood** (also called Blue Beech or American Hornbeam) tree. The tree directly in front of the marker with the plated bark is an **Ironwood** (also called hophornbeam) tree. These trees are often confused with each other due to their similar common names, similar leaf shapes, and extremely hard, dense wood. The wood from either tree is great to use for handles, bowls, and even oxen yokes.

18

How many **Big-Tooth Aspen** (also called poplar) trees can you find here? They are the tallest trees that you see in this area and may even be all from the same root system, making them essentially the same tree. These trees are often the first to come back in an area that has been cleared or burned.

19

Do you see something that looks like a small pine cone growing out of the ground? This is a parasite plant called **Squawroot** (cancer root or bear cone) that grows on the roots of, typically, oak or beech trees. Having these here tells us this forest is old but healthy. White-tailed deer and black bear like to munch on the seeds and old stalks. Like a mushroom, most of the plant's mass is underground. How many can you find?

20

This is a **Red Oak** tree—the most prevalent oak species in Michigan. It can grow more than 2 feet per year for the first 10 years, often reaching heights of up to 60–75 feet. The acorns of the red oak need 2 years to mature on the tree before becoming

